

4/6/2018

Print



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	T
PO039505	ACI001-VC	1	1	Net 30	MT-4140QT-R4.000	AISI 4140 Quenched & Tempered Steel Round Bar 4.000" Dia. ; AISI 4140 Q&T Round Bar ; MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT				2	4/11/2018	2		S058924	Stock	4/6/2018	\$ 86.95 / ft	0		\$
		2			MT-4140-R2.000	AISI 4140 Round Bar : MAT'L, AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529						2		S058925	Stock	4/6/2018	\$ 19.16 / ft	0		
Total:										4		4								\$1

Plex 4/6/2018 1:26 PM Dart Dubois Pascal



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO039505

Supplier: ACI001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

PO No: PO039505
PO Date: 4/4/18
Due Date: 4/11/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30

Freight Terms:

Special Comments: QUOTE NO SOU0093341

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	MT-4140QT-R4.000		AISI 4140 Quenched & Tempered Steel Round Bar 4.000" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	4/11/18	2 ft	0 ft	2 ft	\$86.95/ft	\$173.90
2	MT-4140-R2.000		AISI 4140 Round Bar : MAT'L, AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529	Firmed	4/11/18	2 ft	0 ft	2 ft	\$19.1555/ft	\$38.31
3	M6061T6S2.750X4.000		6061-T6 SHEET 2.75 Thick x 4.000 Wide : PURCHASE MATERIAL: 6061-T6/T62/T651 ALUMINUM SHEET OR PLATE SPECIFICATION: QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR 4027 OR ASTM B209 receive ft	Firmed	4/11/18	6 ft	0 ft	6 ft	\$64.16666/ft	\$385.00

Grand Total: \$597.21

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

CXL

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 4/6/18 12:49 PM dart.dubois.pascal



DELIVERY - CLIENT

Copy CO00082164

ACIER OUELLETTE INC.
935, Boul. du H vre
Salaberry de Valleyfield (Qu bec) J6S 5L1
T l.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Billed to
DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

Instruction F-M

Delivery Route 5

Page 1

Credit Terme

Net 30 Days

Salesman
Carrier

OUELLETTE VALLEYFIELD

Processed by

Josianne Bourdon

Your order N 

039505

Delivery date

2018/04/06

Date

2018/04/05

Customer N 

CL10001056

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
1 ROUND 4140 HEAT TREAT 4 (R) R4140-4H 4965 <i>1 X 24" LINE 1 HEAT: 12080470 COUPE A LA SCIE SCIE</i>	88.14	2.00	PI_\$CLB		1 X 24"		2				APR 06 2018 DAS 11 9-09
2 ROUND 4140 ANNEALED 2 (R) R4140-2A 4935 <i>1 X 24" LINE 2 HEAT: 144805 COUPE A LA SCIE SCIE</i>	21.36	2.00	PI_\$CLB		1 X 24"		2				APR 06 2018 DAS 11 9-09

NIR : R-109516-6

Next Page...

Eaton Steel Bar Company Inspection Certificate 1701209

EN 10204:2004-3.1

Customer

BOL

Ship Date

Customer PO

Item

Customer Item

Item Description

225539 19-Feb-2018 B40059

8556 rev 008

013733

4 HR RD 4140TKR 21/24H SBO QTSF VD Ca-AL-FG MST

All bundles listed below were produced using steel from Heat 12060470 issued by GERDAU-BRAZIL and were completed from Eaton Steel Job 823764.

Chemistry	Description	Value	Units	Geometry	Description	Value	Units
C	Carbon	0.41000	PMGT	J30	30/16 inch from Quenched End	42	HRC
Mn	Manganese	0.94000	PMGT	J32	32/16 inch from Quenched End	42	HRC
P	Phosphorus	0.01400	PMGT				
S	Sulfur	0.01400	PMGT				
Si	Silicon	0.29000	PMGT				
Ni	Nickel	0.09000	PMGT				
Cr	Chromium	1.04000	PMGT				
Mo	Molybdenum	0.24000	PMGT				
Al	Aluminum	0.01700	PMGT				
Cu	Copper	0.18000	PMGT				
V	Vanadium	0.00400	PMGT				
Nb	Niobium	0.00400	PMGT				
N	Nitrogen	0.00570	PMGT				
DI	Ideal Diameter	6.62910	IN				
Cleanliness	Description	Value	Units				
SAE J422 OX	SAE J422 Oxide Rating	0.0 - 5.0	NOM				
SAE J422 SI	SAE J422 Silicate Rating	0.0 - 5.0	NOM				
MACRO ETCH	Report macro etch results.						
Geometry	Description	Value	Units				
DIAMETER	Diameter	4.0000 - 4.0625	IN				
Jominy	Description	Value	Units				
J1	1/16 inch from Quenched End	59	HRC				
J2	2/16 inch from Quenched End	59	HRC				
J3	3/16 inch from Quenched End	58	HRC				
J4	4/16 inch from Quenched End	58	HRC				
J5	5/16 inch from Quenched End	58	HRC				
J6	6/16 inch from Quenched End	57	HRC				
J7	7/16 inch from Quenched End	57	HRC				
J8	8/16 inch from Quenched End	57	HRC				
J9	9/16 inch from Quenched End	56	HRC				
J10	10/16 inch from Quenched End	56	HRC				
J11	11/16 inch from Quenched End	55	HRC				
J12	12/16 inch from Quenched End	54	HRC				
J14	14/16 inch from Quenched End	52	HRC				
J16	16/16 inch from Quenched End	51	HRC				
J18	18/16 inch from Quenched End	49	HRC				
J20	20/16 inch from Quenched End	46	HRC				
J22	22/16 inch from Quenched End	43	HRC				
J24	24/16 inch from Quenched End	43	HRC				
J26	26/16 inch from Quenched End	42	HRC				
J28	28/16 inch from Quenched End	42	HRC				

Bundle tags with Eaton Steel identifies reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/21/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 19-Feb-2018

Marc Benjamin, Corporate Metallurgist

The document was prepared by means of a computer program designed to add software updates.

10221 Capital Avenue, Oak Park, MI 48237 USA
http://www.eatonsteel.com

Tel: 248-398-3434
Fax: 248-398-1434



OUR MANAGEMENT SYSTEM IS CERTIFIED TO ISO9001 / TS16949 / ISO14001

PART NUMBER 8168		PESO/WEIGHT (KG) 40.553,000		MATERIAL/MATERIAL 705013345		QUALIDADE/GRADE 41A0TER		BITOLA/SIZE 101,60 mm		PRODUTO/PRODUCT HOT ROLLED ROUND BAR NO HEAT TREATMENT AS ROLLED		Cert. Nº 0000022442				
CLIENTE/CLIENT EATON STEEL BAR COMPANY		NORMA/SPECIFICATION SPEC FOR ITEM 8168 006 23.01.2014		CORRIDA/HEAT 12080470												
Nota Fiscal/Invoice		Pedido/Cust.Order		Ord-Formec/Ord-Supply		Lote/Batch		Peso/Weight (kg)								
0000017226		162566		5336580 - 8108897269		1208047006		22.523,000								
0000017311		162566		5336580 - 8108972888		1208047006		13.530,000								
0000017692		162566		5336580 - 8109066468		1208047007		4.500,000								
ANÁLISE QUÍMICA/CHEMICAL COMPOSITION																
C	Mn	Si	P	S	Cr	Ni	Mo	V	Cu	Sn	Al	Ti	Nb	N	B	EP
0,410	0,94	0,29	0,014	0,014	1,04	0,09	0,24	0,0040	0,180	0,0120	0,0170	0,0010	0,0040	0,0057	0,0002	0,0010
H	Ca	As	Sb	DI												
ppm	1,00	0,0008	0,0030	0,0020	6,6291											
ENSAIOS MECÂNICOS/MECHANICAL PROP																
Hardness HB 306,00																
ENSAIOS METALOGRAFICOS/METALLOGRAPHIC TESTS																
Austenitic Grain Size 7																
MICROINCLUSÕES/INCLUSION RATING NUMBER																
ASTM/SAE																
REGULAR	A - TS 1,5	A - HS 1,0	B - TS 0,0	B - HS 1,5	C - TS 0,0	C - HS 0,0	D - TS 1,0	D - HS 0,0								
SAE	Oxide 0,0	Silicatos 0,0														
REGULAR																
MACROGRAFIA/MACROGRAPHY																
Blue Fracture (H)																
1																



OUR MANAGEMENT SYSTEM IS CERTIFIED TO ISO9001 / TS16949 / ISO14001

PART NUMBER 8168	PESO/WEIGHT (KG) 40.553,000	MATERIAL/MATERIAL 705013345	PRODUTO/PRODUCT HOT ROLLED ROUND BAR	Cert. N° 0000022442																																		
CLIENTE/CLIENT BATON STEEL BAR COMPANY		QUALIDADE/GRADE 4140TKR	NO HEAT TREATMENT AS ROLLED	CORRIDA/HEAT 12080470																																		
<p>TEMPERABILIDADE/HARDENABILITY</p> <table border="1"> <tr> <td>1/16"</td> <td>2/16"</td> <td>3/16"</td> <td>4/16"</td> <td>5/16"</td> <td>6/16"</td> <td>7/16"</td> <td>8/16"</td> <td>9/16"</td> <td>10/16"</td> <td>11/16"</td> <td>12/16"</td> <td>14/16"</td> <td>16/16"</td> <td>18/16"</td> <td>20/16"</td> <td>22/16"</td> </tr> <tr> <td>HRC 59,5</td> <td>HRC 59,1</td> <td>HRC 58,8</td> <td>HRC 58,2</td> <td>HRC 58,0</td> <td>HRC 57,8</td> <td>HRC 57,5</td> <td>HRC 57,0</td> <td>HRC 56,5</td> <td>HRC 56,0</td> <td>HRC 55,6</td> <td>HRC 54,0</td> <td>HRC 52,5</td> <td>HRC 51,3</td> <td>HRC 49,8</td> <td>HRC 46,5</td> <td>HRC 43,5</td> </tr> </table>					1/16"	2/16"	3/16"	4/16"	5/16"	6/16"	7/16"	8/16"	9/16"	10/16"	11/16"	12/16"	14/16"	16/16"	18/16"	20/16"	22/16"	HRC 59,5	HRC 59,1	HRC 58,8	HRC 58,2	HRC 58,0	HRC 57,8	HRC 57,5	HRC 57,0	HRC 56,5	HRC 56,0	HRC 55,6	HRC 54,0	HRC 52,5	HRC 51,3	HRC 49,8	HRC 46,5	HRC 43,5
1/16"	2/16"	3/16"	4/16"	5/16"	6/16"	7/16"	8/16"	9/16"	10/16"	11/16"	12/16"	14/16"	16/16"	18/16"	20/16"	22/16"																						
HRC 59,5	HRC 59,1	HRC 58,8	HRC 58,2	HRC 58,0	HRC 57,8	HRC 57,5	HRC 57,0	HRC 56,5	HRC 56,0	HRC 55,6	HRC 54,0	HRC 52,5	HRC 51,3	HRC 49,8	HRC 46,5	HRC 43,5																						
<p>GRAU DE REDUÇÃO/REDUCTION RATE</p> <p>6,9941 : 1</p>																																						
<p>OBSERVAÇÕES/OBSERVATIONS</p> <p>Melshop route: BAF, LF, VD, CC.</p> <p>Made in Brazil at Gerdau Charqueadas.</p> <p>Produced according to ASTM A304 and ASTM A322</p> <p>Reduction Ratio: 7,1:1</p> <p>Melted in Brazil</p> <p>Rolled in Brazil</p>																																						
<p>ENVIRONMENTAL RECOMMENDATIONS RELATED TO PRODUCTS:</p> <p>In order to contribute with the environment and sustainable development of our productive chain, we recommend to our clients to dispose accordingly the waste related to our products, according to the environmental legislation of your region, state or country.</p>																																						
<p>DEPARTAMENTO DA QUALIDADE / QUALITY DEPARTMENT</p> <p>BR-ML-CHARQUEADAS-AFP. 20.09.2017</p> <p>ANDRÉ L. SILVA FAGUNDES CREA 0682601000</p> <p><i>[Signature]</i></p>																																						

Lab Services Report



10221 Capital Avenue
Oak Park MI 48237
(248)543-3578 telephone
(248)398-1434 facsimile

Bill To: Apollo Heat Treating and
Processing Company, L.L.C.
10400 Capital Avenue
Oak Park, MI

Ship To: Apollo Heat Treating and
Processing Company, L.L.C.
10400 Capital Avenue
Oak Park, MI

Attn: Randy Call
rcall@apollohtp.com

Report Date: 12/20/2017

Report ID: 17-4982

Request ID:

This report contains results for the indicated services performed on the following sample(s):

Part No	8556	Finish	HR	Shape	Round	PO #	823764
Size	4.000	Grade	4142	Work Order	823764		
Titan Sample ID		Heat	Customer Sample ID				
17-4982-1		12080470	823764 JOB 3173				

Steve Avery

Report Approved By: Steve Avery

Mechanical Testing

ASTM E8M-16a

ASTM E10-17

Sample ID	Ultimate Tensile, psi	0.2% Offset Yield, psi	Elongation - Manual, %	Reduction of Area, %	HBW Surface
17-4982-1	153,100	134,400	19	55	313

Test Comments

Mechanicals tested at Midradius



Certificate Number: 2007.01
Testing Laboratory

Any services within a section marked with * are not part of Titan Metallurgy's current A2LA accreditation.

All testing performed by Titan Metallurgy was done at ambient (room) temperature.

Report ID:17-4982

Page 1 of 1



10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434


CERTIFICATION OF HEAT TREATMENT

Date: 12 / 29 / 2017
Certification Number: 17 - 0888
Customers Order Number: 823764
Part Number: 8168 - 8556
Heat Number: 12080470
Heat Treat Job Number: 3173

Material: 4140
Quantity: 84 Pcs.
Weight: 83,449 Lbs.
Description: 4.0000" Diameter x 23' 4" Length
Per Specification: ESHT HT4140 - 42QT

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1575 °F	1 Hour 30 Minutes	
Spray Quenched	98.1 °F – 104.9 °F	N/A	Water
Temper	1150 °F	2 Hours 35 Minutes	Air Cooled to Ambient
Temper	N/A		

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E.
We hereby certify the above material has been treated in the manner described are correct as
contained in the records of Apollo Heat Treating and Processing, LLC.



Randy L. Call
Plant Manager
Apollo Heat Treating & Processing, LLC



10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434

CERTIFICATION OF HEAT TREATMENT

Date: 12 / 29 / 2017
Certification Number: 17 - 0889
Customers Order Number: 823764
Part Number: 8168 - 8556
Heat Number: 12080470
Heat Treat Job Number: 3173

Material: 4140
Quantity: 91 Pcs.
Weight: 91,375 Lbs.
Description: 4.0000" Diameter x 23' 4" Length
Per Specification: ESHT HT4140 - 42QT

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1575 °F	1 Hour 30 Minutes	
Spray Quenched	98.1 °F - 104.9 °F	N/A	Water
Temper	1150 °F	2 Hours 35 Minutes	Air Cooled to Ambient
Temper	N/A		

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E.
We hereby certify the above material has been treated in the manner described are correct as
contained in the records of Apollo Heat Treating and Processing, LLC.

A handwritten signature in black ink, appearing to read 'Randy L. Cail', is written over a horizontal line.

Randy L. Cail
Plant Manager
Apollo Heat Treating & Processing, LLC

Eaton Steel Bar Company Inspection Certificate 1506751

EN 10204:2004-3.1

Customer	BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
	176582	22-May-2015	B88339	8914 rev 002	013743	2 HR RD 4140ME 18ft FQ LPA FG MST

All bundles listed below were produced using steel from Heat 144805 issued by ALTON STEEL and were completed from Eaton Steel Job 763566.

Chemistry	Description	Value	Units	Heat Treating	Description	Value	Units
C	Carbon	0.41900	PMGT	AUSTEN TEMP F	Authenticate Temp in Fahrenheit	1600 - 1700	DRGF
Mn	Manganese	0.89000	PMGT	MAGNETISM-HT	Magnetism in Gauss	0 - 20	GR
P	Phosphorus	0.01500	PMGT	MST-HT	Machine Straighten	Satisfactory	
S	Sulfur	0.02400	PMGT	TIME AT TEMP	Time at Temperature	Report	Units
Si	Silicon	0.24000	PMGT	Mill Processing	Description	Value	Units
Ni	Nickel	0.09100	PMGT	MELT COUNTRY	Melted in Country	USA	
Cr	Chromium	0.83500	PMGT	ROLLED COUNTRY	Rolled in Country	USA	
Mo	Molybdenum	0.16000	PMGT	RSD RATIO	Reduction Ratio	15.60	RED
Al	Aluminum	0.00300	PMGT	ASTM Standard	Description	Value	Units
Cu	Copper	0.28000	PMGT	A32-91	Steel Bars, Alloy, Standard Grades	CONFORMS	Units
V	Vanadium	0.00500	PMGT	Structure	Percent Lamellar Pearlite	70 - 100	PER
Ca	Calcium	0.03000	PMGT	PERCENT LP	Percent Lamellar Pearlite	Value	LP
N	Nitrogen	0.01190	PMGT	MICROSTRUCTURE	Reported Microstructure	Length	18ft
DI	Ideal Diameter	0.01220	PMGT	Tag Number	022-1591052	Qty Units	8230 LBS
cleanliness	Description	Value	Units				
MACRO ETCH	Report macro etch results.		Units				
Geometry	Description	Value	Units				
DIMETERS	Diameter	1.9844 - 2.0156	IN				
Donny	Description	Value	Units				
J1	1/16 inch from Quenched End	56	ERC				
J2	2/16 inch from Quenched End	56	ERC				
J3	3/16 inch from Quenched End	56	ERC				
J4	4/16 inch from Quenched End	56	ERC				
J5	5/16 inch from Quenched End	56	ERC				
J6	6/16 inch from Quenched End	54	ERC				
J7	7/16 inch from Quenched End	53	ERC				
J8	8/16 inch from Quenched End	51	ERC				
J9	9/16 inch from Quenched End	50	ERC				
J10	10/16 inch from Quenched End	48	ERC				
J12	12/16 inch from Quenched End	46	ERC				
J14	14/16 inch from Quenched End	44	ERC				
J16	16/16 inch from Quenched End	42	ERC				
J18	18/16 inch from Quenched End	41	ERC				
J20	20/16 inch from Quenched End	40	ERC				
J22	22/16 inch from Quenched End	38	ERC				
J24	24/16 inch from Quenched End	35	ERC				
J28	28/16 inch from Quenched End	34	ERC				
J32	32/16 inch from Quenched End	34	ERC				
Mechanical	Description	Value	Units				
BRINELL KTD	Brinell Mid Radius	197.0	BRN				

Bundle tags with Eaton Steel Identifiers reference the steel grade, heat, purchase order number, part number, product description and weight. Tested and certified in accordance with Eaton Steel's Quality Manual QM-00001 / Rev 3 / 2/26/13.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.



CERTIFIED MILL TEST REPORT

Alton Steel Test Lab
#5 Oak Street
Alton, IL 62002-5011
(618) 463-4490 EXT 2466
(618) 463-4491 (Fax)

BILL TO

Eaton Steel Corporation
10221 Capital Avenue

SHIP TO

Eaton Steel Corporation
Super Steel Treating Company
CWC - To be delivered to customer's
Truck
Alton, IL 62002

Oak Park, IL 48237

Date	09/24/2014	Customer PO	148131	Specification	(SAE 4140H) ASTM A 29-12, ASTM A 322-07	Shard Oak, R _R = 15.601											
ASI Ord No.	70013	Customer PT.	1003623														
Item Description	Steel Bar, Hot Rolled, 2.0000, 18" 0"																
Heat Number	144805																
CHEMICAL ANALYSIS TEST METHODS ASTM E-415 & E-1019																	
Heat Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sr	Al	Nb/Co	V	B	Ti	N	Ca
144805	0.41	0.89	0.015	0.004	0.24	0.28	0.091	0.835	0.160	0.012	0.003	0.030	0.005	0.0004	0.0010	0.0122	0.0019
JOINTLY HARDENABILITY USING ASTM A-255 CALCULATED FROM CHEMICAL PT																	
Heat Number	GS	DT															
144805	8	4.83															
SPECIAL TEST RESULTS																	
ASTM E-415 Method A: ASTM E-415 Method C: SAE J422 ASTM E-381 Charpy Hardness																	
Heat Number	TA	TB	TC	TD	TA	TB	TC	TD	S	O	S	R	C	NC RD BWT			
144805									2	1	2						

ADDITIONAL COMMENTS

No mercury, lead, niobium, or alpha containing material or equipment is used or deliberately added in the production of this steel. No weld or weld repairs were performed on this material. This steel is 100% Electric Arc Furnace melted and rolled in the U.S.A. Material qualifies as AIAVTA origin product.

Subscribed and sworn to before me, a Notary Public, in and for the county of Madison, State of Illinois

This _____ Day of _____

My commission expires _____

(Notary Public)

Attention or reproduction of this report, except in full, is not allowed without written approval by a representative of Alton Steel Incorporated.
I hereby certify that the above tests are correct as contained in the records of ALTON STEEL, INCORPORATED

Quality Leader: Josh Levi



Super Steel Treating
5227 Rinke Ave
Warren MI 48091
(586) 755-9140
ISO 9001:2008 Registered

Quality Report

Date	Q.C. ID No.
10/17/14	WOBRL37106

Customer: EATON STEEL CORP

Metallurgist: AJR

Metallurgical Certification

Customer: EATON STEEL CORP PLT#2
Grade: 4140
Size: 2.0000
Heat No: 144805
Receiver: BR137106
Cust PO: 147376
Furnace Process: 1
Date Processed: 10/17/14
Accepted Weight: 64500
Accepted Qty: 7
Mill: ALTON
Release No:
Process TY: LPA
Our Part: EAT05563
Cust Part: 8914

Representative Sampling

Sample	Coil ID#	Decarb	TY	-- Kld Radius --	--- Surface ---	Microstructure			
				HRB	HRC	HB	HRB	HRC	HB
137199		0.010				197			100% PEARLITE
Coil/Bundle ID:	144805001	144805002	144805003	144805004					
	144805005	144805006	144805007						

V0763566A
wt 389808

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140-R2.000
DATE: APR 06 2018

PO / BATCH NO: 239505/5058925

MATERIAL CERT REC'D: yes
QUANTITY RECEIVED: 2
QUANTITY INSPECTED: 2
QUANTITY REJECTED: 0

THICKNESS ORDERED: 2.000
THICKNESS RECEIVED: 2.000
SHEET SIZE ORDERED: N/A
SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	Astm A29
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # 144805
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS 11</u>		SIGNED OFF BY: _____	
DATE: <u>9-89 APR 06 2018</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 ROUND BAR
MINIMUM ROCKWELL C = 20 Rc
MAXIMUM ROCKWELL C = 38 Rc

SPECIFICATION:

ASTM A29, AMS 6349, AMS 6382, AMS 6629

PART NUMBER:

MT-4140-R-ID-DDD
WHERE "D.DDD" = DIAMETER IN INCHES

EX. 4" ROUND BAR = MT-4140-R-4.000

DART AEROSPACE <small>Hamletbury, Ontario, Canada</small>	
TITLE AISI 4140 ROUND BAR	
PART NO. MT-4140-R	
TOOL NO. A	
DESIGNED BY: VM 17/12/13	TOLERANCES: ± .005
DRAWN BY: VM 12/13/2017	± .005
CHECKED BY: ML 12/18/2017	± .005
APPROVED BY: DP 12/20/2017	± .005
DATE: 12/20/2017	SCALE: 1:1
SHEET 1 OF 1	
<small>(THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.)</small>	

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT-R4.000

PO / BATCH NO.: 038505/5058924

DATE: APR 06 2018

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 2
 QUANTITY INSPECTED: 2
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.000
 THICKNESS RECEIVED: 4.000
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>ASTM 4140-42QT</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 12080470</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION

ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS 11

SIGNED OFF BY: _____

DATE: 9-89 APR 06 2018

DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 QUENCHED & TEMPERED STEEL ROUND BAR

SPECIFICATION:

ASTM 4140 QT or ASTM 4142 QT

PART NUMBER:

MT-4140QT-R [D.DDD]

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = MT-4140QT-R0.625

REV.	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	17.09.12	VM	VM

DART AEROSPACE Newmarket, Ontario, Canada	
TITLE: AISI 4140 Q&T ROUND BAR	
PART NO. MT-4140QT-R	
REV. A	
DESIGN BY: VM 8/9/2017	2000 3 2005 FRACTIONS X 16
DRAWN BY: VM 09/14/2017	2X 1 21 ANGLES 25°
CHECKED: VM 09/14/2017	1. DIMENSIONS ARE IN INCHES
QA APPR: DP 09/14/2017	2. INTERPRET DIM AND TOL PER
APPROVED: VM 09/14/2017	3. ASME Y14.5M-2009
DATE: 9/14/2017	SCALE: NTS WEIGHT: 0.0 LBS
SHEET 1 OF 1	
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ECW 17-655